

REMARKS

In an Office Action dated May 3, 2006 and an Advisory Action dated July 14, 2006, the Examiner rejects claims 1-11, 13-15, 17-34, and 36-38 (All Pending Claims). In response to the Office Action and Advisory Action Applicants amend claims 1 and 20; and respectfully traverse the rejections. Claims 1-11, 13-15, 17-34, and 36-38 remain in the Application. In light of the following arguments, Applicants respectfully request that the rejects be removed and the claims be allowed.

Applicant has amended claim 1 to correct informalities in the claim. No new matter is entered in these amendments.

Claim 1 is rejected under 35 U.S.C. §103(a), as being unpatentable over U.S. Patent number 5,284,492 issued to Dubin (Dubin). In order to maintain a rejection the Examiner has the burden of providing evidence of prima facie obviousness. See MPEP §2143. See also In Re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). In order to prove prima facie obviousness, the Examiner must provide evidence in the prior art of a motivation to combine or modify a reference, a reasonable expectation of success, and a teaching of each and every claimed element. Id.

The Examiner is reminded that evidence of a teaching of each and every limitation in a claim. Applicants would like to point out that claim 1 specifically recites a coupling agent that maintains phase stability at the high temperatures and shear pressures of an internal combustion engine. Thus, the Examiner must give weight to this limitation as the recitation of an internal combustion engine is a requirement of this limitation in the claims as this is part of the limitation of the claim and not merely mentioned in the preamble. Thus, Applicants do not understand the Examiners argument on pages 2 and 3 of the Office Action that this is in the preamble and does not warrant

consideration in examining the claim. Thus, Applicants resubmit the following arguments in regards to the coupling agent of amended claim 1.

Amended claim 1 recites "...a coupling agent for maintaining phase stability at high temperatures and shear pressures in said internal combustion engine wherein said coupling agent is a one selected from a group consisting of: a di-acid of the Diels-Alder adducts of unsaturated fatty acids and a tri-acid of the Diels-Alder adducts of unsaturated fatty acids and wherein said neutralizer combines with a select acid to form a water soluble salt." Dublin does not teach this limitation. Applicants have read the entirety of Dublin and can find no reference to a coupling agent. In particular, Applicants have not found any reference to a coupling agent that maintains phase stability at the high temperatures and sheer pressures in an internal combustion engine. Dublin teaches the use of di- and tri- acids as created for use as lubricity enhancers, the di- and tri- acids are oil soluble. See Col. 7, lines 15-65. Thus, these di- and tri acids taught in Dublin are not useful at the high temperatures and sheer pressures in an internal combustion engine as the coupling agents are not water soluble.

As is clear from the abstract of Dublin, the disclosed fuel is for a turbine engine. Thus, the Dublin fuel does not need to withstand the same pressures or temperatures as the emulsion as recited in amended claim 1. All of the other references do not disclose the use of di- or tri-acids as recited in amended claim 1 and are merely added to include various other additives into the emulsion. Thus, the neutralizer and coupling agent recited in amended claim 1 are not taught by the reference provided by the Examiner. Therefore, Applicants respectfully request that the rejection of claim 1 be removed and amended claim 1 be allowed.

Furthermore, the chemicals acting as a coupling agent in a turbine are different from the compounds that may act as a coupling agent in an internal combustion engine

as the heat and shear in the two types of engine are different. It is obvious that a fuel applicable in a gas turbine cannot be immediately assumed to work in an internal combustion engine. A good example of this is kerosene, which is commonly used in aviation gas turbines but will not burn in an internal combustion engine using compression ignition. Therefore, any teachings of Dubin have no relation to the present invention, as one with ordinary skill in the art would not associate them readily. Furthermore, Dublin does not teach the coupling agent recited in amended claim 1.

Applicants would like to further assert that Dubin does not teach the surfactant recited in amended claim 1. Specifically, amended claim 1 recites “a surfactant package comprising a primary surfactant, a block copolymer stabilizer, and a polymeric dispersant.” Dubin does not teach this limitation. Instead Dubin teaches the use of a physical emulsion stabilizer including waxes and cellulose products. See Col. 6, lines 54 - Col. 7, line 3. One skilled in the art will recognize that a chemical stabilizer and a physical stabilizer do not react with emulsion in the same way. Specifically, the physical stabilizer physically prevents the mixing of the petroleum based product and water while a chemical stabilizer changes the property of the material to prevent the separation. Thus, Dubin does not teach the surfactant recited in amended claim 1. Therefore, Applicants respectfully request that the rejection of claim 1 be removed and amended claim 1 be allowed.

Furthermore, the surfactant of amended claim 1 includes a polymeric dispersant. A dispersant is not taught in Dubin. In fact, nowhere in Dubin is a dispersant taught. It has been found that use of a dispersant increases the stability of emulsion and allows for decreased amounts of another material. This is shown in formulations XIII and XIX in table 1 of the specification. Therefore, Dubin does not teach the dispersant recited in amended claim 1.

For these reasons, Applicants respectfully request that the rejection of claim 1 be removed and amended claim 1 be allowed.

Since claims 2-11, 13-15, and 17-18 depend from claim 1 Applicants respectfully submit that claims 2-11, 13-15 and 17-18 are also patentable as they contain the same limitations as amended claim 1.

The same arguments made above with respect to the patentability of amended claim 1 are applicable to the patentability of amended claim 20 as well.

Since claims 21-34, 36-37, and 39-45 depend from claim 20, Applicants respectfully submit that claims 21-34, 36-37, and 39-45 are also patentable as they contain the same limitations as amended claim 20.

If the Examiner has any questions regarding this application, the Examiner may telephone the undersigned at 775-586-9500.

Respectfully submitted,  
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